

SHIP DEC. 15

Work Order ID 146586

146586

Page 1

Thursday, May 19, 2016 2:55:53 PM

Item ID: D117-837-011 **Accept** ***N900040100*** **Setup Start** ***NS1***
Revision ID: **Stop** ***NS2***
Item Name: BK117 Quick Release Heli-Utility-Basket™ Fits LH or RH
Start Date: 6/15/2016 **Start Qty:** 1.00 ***1*** **Cust Item ID:**
Required Date: 6/27/2016 **Req'd Qty:** 1.00 ***1*** **Customer:**
Reference:

Approvals: **Process Plan:** MCS **Date:** MAY 24 2016 **Tooling:** _____ **Date:** _____ **Run Start** ***NR1***
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop** ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
DSI9706-011	A								
DSI9716	A								
IIN-D117-837	B								

100 Document Control 0.00
100 DOCUMENT CONTROL
 DC **Memo** 0.00
 Doc.Control -USB or Paperwork Photocopy bluefile & type labels per PPP D117-837-011 CHG006

110 Pick Kit 0.00
110 **Memo** 0.00
 Packaging
 Packaging

DAS
21
9-89

16-12-05

DAS
28
9-89

16/12/17

DAS
6
9-89DEC 05 2016
DAS
27
9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
				Completed By					
				Lead hand / Supervisor Approval Verification					
				QC / QA Coordinator Approval					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Work Order ID 146586

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146586

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Item ID: D117-837-011**Accept*****N900040100*****Setup Start*****NS1*****Revision ID:****Stop*****NS2*****Item Name:** BK117 Quick Release Heli-Utility-Basket™ Fits LH or RH**Start Date:** 6/15/2016 **Start Qty:** 1.00 ***1*****Cust Item ID:****Required Date:** 6/27/2016 **Req'd Qty:** 1.00 ***1*****Customer:****Reference:****Approvals:** **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____**Run Start*****NR1*****QC:** _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____**Stop*****NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC4- 100% Inspect kits for completeness	0.00							
120									
QC	Memo	0.03							
Quality Control									
130		0.00							
130	Packaging								
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D117-837-011 Location: _____								
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.10							
Quality Control									

DAS
28
9-89

16/12/07

DAS
28
9-89

16/12/07

DAS
21
9-89

DEC 07 2016

DAS
21
9-89

DEC 07 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval 	
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	

Root Cause				FAULT CATEGORY			
Environment ☐	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐
Design ☐	☐	Operator	☐	Bending	☐	Set-up	☐
Doc/Data ☐	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐
Equip/Tooling ☐	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐
Handling/Pre ☐	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐
Material ☐	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐
Internal Transport ☐	☐	Poor Information	☐	Crushing	☐	Countersink	☐
Tribal Knowledge ☐	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐
LOA ☐	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐
Substation ☐	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐
Past Expiry Date ☐	☐	Manufacturing Process	☐	OTHER : _____			
Misidentified ☐	☐	Past Due	☐				

Picklist Print

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Page 1

Work Order ID: 146586

146586

Parent Item: D117-837-011

D117-837-011

Parent Item Name: BK117 Quick Release Heli-Utility-Basket™ Fits LH or RH

Start Date: 6/15/2016

Required Date: 6/27/2016

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A 13.03.28 NEW ISSUE DD VERF:JLM IPP REV:B
13.06.21 IIN-D117-837 REV.A DD VERF:JFS IPP REV:C 13.12.02
ecn 13-670/ chg002 DD VERF:JLM IPP REV:D 14.07.25 ecn 14-571/
chg003 DD VERF:JLM IPP REV:E 14.07.25 ecn 14-624/ chg004 DD
VERF:JLM IPP REV:F 15.02.02 AS PER DIS9716 DD
VERF:JLM IPP REV:G 15.05.27 now at chg006 DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4911-5 *D4911-5* Bracket		Manufactured	No				Each	6.0000	**	2		DEC 0 5 2016	DAS 6 27 9-89-89
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				ST137				6					
				126510				6					
D5203-041 *D5203-041* Strut Assembly		Manufactured	No				Each	4.0000	**	1		DEC 0 5 2016	DAS 6 27 9-89-89
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				ST370				4					
				144223				4					
D5204-1 *D5204-1* Bracket		Manufactured	No				Each	17.0000	**	2		DEC 0 5 2016	DAS 6 27 9-89-89
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				ST157				17					
				132999				17					

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

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Work Order ID: 146586

146586

Parent Item: D117-837-011

D117-837-011

Parent Item Name: BK117 Quick Release Heli-Utility-Basket™ Fits LH or RH

Start Date: 6/15/2016

Required Date: 6/27/2016

Start Qty: 1.00

Required Qty: 1.00

D5205-1 Manufactured No

Each 5.0000

D5205-1

Bracket

**

DEC 0 5 2016

DAS 6 27
9-89 9-89

Location

Loc Qty

Loc Code

ST157

5

139876

5

NAS1149F0832P

Purchased No

Each 137.0000

NAS1149F0832P

WASHER

**

DEC 0 5 2016

DAS 6 27
9-89 9-89

Location

Loc Qty

Loc Code

ST262

137

18057

137

D117-837-111

Manufactured No

110 Each 0.0000

D117-837-111

BK117 Basket Mounting Provisions

D4784-011

Manufactured No

110 Each 0.0000

D4784-011

Basket Assembly, Heavy Duty Lid, LH/RH

D4911-1

Manufactured No

110 Each 8.0000

D4911-1

Bracket

**

DEC 0 5 2016

DAS 6 27
9-89 9-89

Location

Loc Qty

Loc Code

ST136

8

121945

4

122824

4

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DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Picklist Print

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Work Order ID: 146586

146586

Parent Item: D117-837-011

D117-837-011

Parent Item Name: BK117 Quick Release Heli-Utility-Basket™ Fits LH or RH

Start Date: 6/15/2016

Required Date: 6/27/2016

Start Qty: 1.00

Required Qty: 1.00

D5106-041

Manufactured No

110

Each

12.0000

4

4

D5106-041

Bracket Assembly

**

145635

DAS

6

9-89

27

9-89

DEC 05 2016

Location

Loc Qty

Loc Code

st151

12

144226

12

AN3-11A

Purchased

No

110

Each

99.0000

2

2

AN3-11A

Bolt

**

135767

DAS

6

9-89

27

9-89

DEC 05 2016

Location

Loc Qty

Loc Code

ST349

99

m134167

99

AN4-12A

Purchased

No

110

Each

169.0000

4

4

AN4-12A

Bolt

**

135704

DAS

6

9-89

27

9-89

DEC 05 2016

Location

Loc Qty

Loc Code

FG

10

120423

10

over003

125

m134606

125

ST344

34

m134180

34

MS21042-3

MS21042L3

Purchased

No

110

Each

18.0000

2

2

MS21042-3

Nut / use MS21042L3

**

135945

DAS

6

9-89

27

9-89

DEC 05 2016

Location

Loc Qty

Loc Code

ST304

18

M129682

18

DAS

28

9-89

Thursday, May 19, 2016 2:55:52 PM

Shop Packet Print

Page 3

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Picklist Print

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Work Order ID: 146586

146586

Parent Item: D117-837-011

D117-837-011

Parent Item Name: BK117 Quick Release Heli-Utility-Basket™ Fits LH or RH

Start Date: 6/15/2016

Required Date: 6/27/2016

Start Qty: 1.00

Required Qty: 1.00

MS21042L4

Purchased

No

110

Each

2,035.000

4

4

MS21042L4

Locknut

**

1,338.57

DAS 6 27 9-89

DEC 05 2016

DAS 28 9-89

Location

Loc Qty

Loc Code

GA

187

m133769

187

OVER007

1500

m134676

500

m134762

1000

ST303

251

m134606

251

ST305

97

m130922

97

MS21069L3

Purchased

No

110

Each

103.0000

8

8

MS21069L3

ANCHOR NUT

**

1,349.55

DAS 6 27 9-89

DEC 05 2016

DAS 27 9-89

DAS 28 9-89

Location

Loc Qty

Loc Code

ST299

103

m134509

3

m134676

100

MS27039-1-08

Purchased

No

110

Each

508.0000

8

8

MS27039-1-08

Screw

**

1,358.4

DAS 6 27 9-89

DEC 05 2016

DAS 27 9-89

DAS 28 9-89

Location

Loc Qty

Loc Code

FP001

83

m128636

83

GA

73

125654

2

m128636

71

ST281

352

m134502

52

m134762

300

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DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

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Work Order ID: 146586

146586

Parent Item: D117-837-011

D117-837-011

Parent Item Name: BK117 Quick Release Heli-Utility-Basket™ Fits LH or RH

Start Date: 6/15/2016

Required Date: 6/27/2016

Start Qty: 1.00

Required Qty: 1.00

NAS1097AD34

Purchased

No

110

Each

4,963.000

16

16

NAS1097AD34

RIVET

DAS
28
9-89

Location

Loc Qty

Loc Code

ST267

4963

M132525

4963

NAS1149D0416J

Purchased

No

110

Each

4,144.000

8

8

NAS1149D0416J

WASHER

DAS
28
9-89

Location

Loc Qty

Loc Code

GA

222

m131511

222

ST260a

1984

m131511

1984

ST264

1938

m131511

1938

NAS1149F0332P

Purchased

No

110

Each

2,960.000

2

2

NAS1149F0332P

Washer

DAS
28
9-89

Location

Loc Qty

Loc Code

GA

312

m133709

312

ST262

2648

m134257

648

m134676

2000

DAS
6
9-89

DEC 0 5 2016

68-6
27
DAS

DAS
6
9-89

DEC 0 5 2016

68-6
27
DAS

DAS
6
9-89

DEC 0 5 2016

68-6
27
DAS

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DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____					

DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS IIN-D117-837 REV. B AND
INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D117-837 REV. 1
REF. TCCA STC: SH13-22
REF. FAA STC: SR03353NY

1.0 Purpose

The purpose of this Dart Service Instruction (DSI) is to provide instructions to replace the D4911-3 Bracket with a D4911-5 Bracket for customers who already have D117-837-011 at CHG 002 or CHG 003. The D4911-5 Bracket will better distribute the drag load from the D117-837-011 Heli-Utility-Basket to the airframe in flight.

2.0 Removal of D4911-3 Bracket

- 2.1 For D117-837-011 Heli-Utility-Baskets at CHG 003, temporarily remove the D4794-043 Strut Assy from the D4911-1/-3 Brackets by disconnecting 2x MS17984-C405 quick release pin.
- 2.2 For D117-837-011 Heli-Utility-Baskets at CHG 002, temporarily remove the D4794-041 Strut Assy from the D4911-1/-3 Brackets by disconnecting AN4-7 bolts and associated Hardware from both ends of D4794-041 Strut Assy.
- 2.3 Remove the D4911-3 Bracket from airframe by removing 2x MS27039-1-08 Screws and 2x NAS1149F0332P washers.
- 2.4 Inspect the underlying aircraft structure for damage. If cracking/buckling of the aircraft structure is observed, repair per BK117 Aircraft Maintenance Manual Chapter 21-1.

3.0 Installation of D4911-5 Bracket

- 3.1 Temporarily remove LH/RH side cabin outboard floor panels as applicable.
- 3.2 Using D4911-3 Bracket as a template, transfer 2x $\varnothing 0.196$ " (#9 drill) holes from D4911-3 to new D4911-5 Bracket as shown in Figure 1.
- 3.3 Using the D4911-5 as a template, remove two rivets at STA 156.3 (3970) under the D4911-5 Bracket. Transfer drill these rivet holes to the D4911-5 Bracket as shown in Figure 1. Enlarge rivet holes to $\varnothing 0.196$ " (#9 drill) in the aircraft rib and on the D4911-5 Bracket. Transfer $\varnothing 0.098$ " (#40 drill) for MS21069L3 anchor nut and c/sink/dimple holes for NAS1097AD3-(4) rivet as shown in Figure 2. Deburr and touch-up aircraft holes with Alodine 1200/1201 per MIL-C-5541.
- 3.4 Install 2x MS21069L3 anchor nuts using NAS1097AD3-(4) rivets as shown in Figure 2.
- 3.5 Install D4911-5 Bracket into the aircraft ribs using 4x MS27039-1-08 screws and 4x NAS1149F0332P washers as shown in Figure 1. Torque screws to 20-25 in-lbs (2.3-2.8 N-m).
- 3.6 For D117-837-011 Heli-Utility-Baskets at CHG 003, install D4794-043 Strut Assy into D4911-1/-5 Brackets by connecting 2x MS17984-C405 quick release pin per ICA-D117-837 Rev.1.
- 3.7 For D117-837-011 Heli-Utility-Baskets at CHG 002, install D4794-041 Strut Assy into D4911-1/-5 Brackets by installing AN4-7 bolt, 2x NAS1149F0463P washer, AN310C4 nut, MS24665-151 cotter pin in both ends of D4794-041 Strut Assy per ICA-D117-837 Rev.0.
- 3.8 Re-install LH/RH side cabin outboard floor panels as applicable.
- 3.9 Repeat steps 3.1 to 3.8 for opposite side of the aircraft if the aircraft has been configured with basket provisions on both sides.

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AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-O-01

APPROVED

BY: 
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DATE: 14.09.03
CERT. NO.: SH13-22
ISSUE NO.: 1

A	NEW ISSUE	RF	14.09.03
REV.	DESCRIPTION		BY DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	HS	DRAWING NO.	REV. A
MFG. APPR.	N/A	DSI 9706	SHEET 1 OF 3
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4.0 Parts List

For D117-837-011 Heli-Utility-Baskets @ CHG 004, the Parts List in ICA-D117-837 and IIN-D117-837 should be updated as follows:

IS

Qty -011	Part Number	Description
X	D117-837-011	HELI-UTILITY-BASKET, LH/RH
2	D4911-5	BRACKET (REPLACES D4911-3)
8	MS21069L3	ANCHOR NUT
8	MS27039-1-08	SCREW
16	NAS1097AD3-4	RIVET
10	NAS1149F0332P	WASHER

WAS

Qty -011	Part Number	Description
X	D117-837-011	HELI-UTILITY-BASKET, LH/RH
2	D4911-3	BRACKET
4	MS21069L3	ANCHOR NUT
4	MS27039-1-08	SCREW
8	NAS1097AD3-4	RIVET
6	NAS1149F0332P	WASHER

For D117-837-011 Heli-Utility-Baskets @ CHG 002 or CHG 003, the DSI 9706-011 Basket Modification Kit is available from Dart.

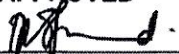
Qty -011	Part Number	Description
X	DSI 9706-011	BRACKET MODIFICATION KIT
2	D4911-5	BRACKET
8	MS21069L3	ANCHOR NUT
8	MS27039-1-08	SCREW
16	NAS1097AD3-4	RIVET
8	NAS1149F0332P	WASHER

5.0 Weight & Balance

This DSI has a negligible effect on Weight & Balance

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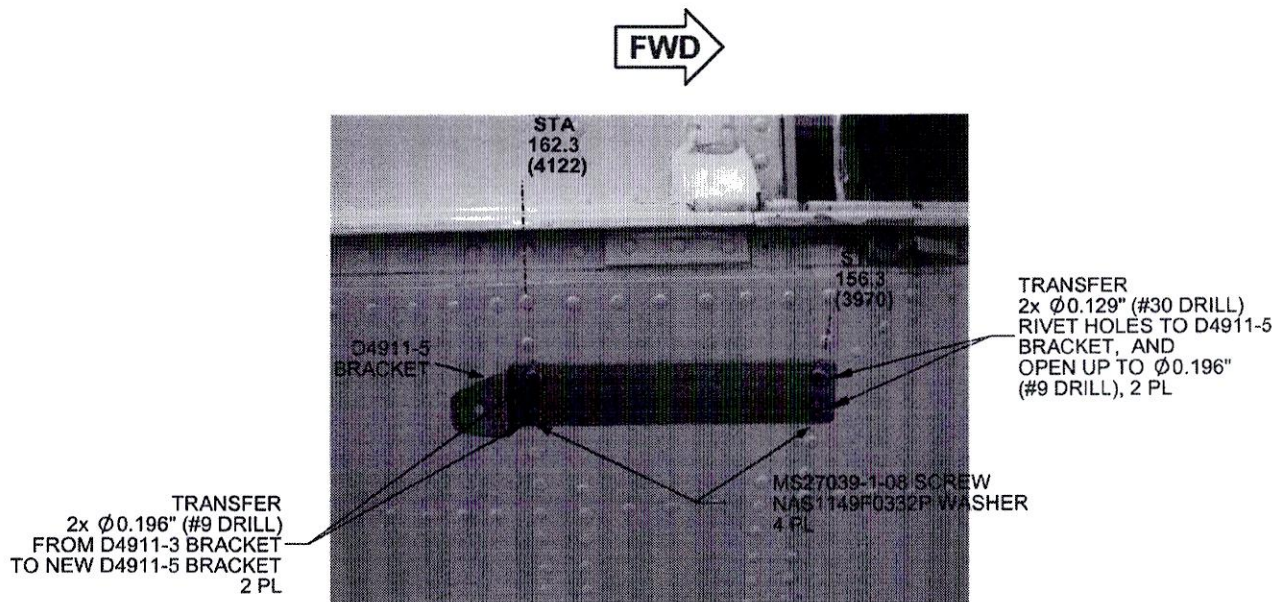


FIGURE 1. D4911-5 BRACKET INSTALLATION
(RH INSTALLATION SHOWN, LH OPPOSITE)

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DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS IIN-D117-837 REV. B AND
INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D117-837 REV. 1
REF. TCCA STC: SH13-22
REF. FAA STC: SR03353NY

1.0 Purpose

The purpose of this Dart Service Instruction (DSI) is to provide instructions to relocate and replace the basket strut assembly on the D117-837-011 Basket Installation for improved reliability in service. The new D5203-041 Strut Assy, D5204-1 Bracket and the D5205-1 Bracket replace the old D4794-043 Strut Assy and D4911-1/-5 Brackets for customers who have D117-837-011 Heli-Utility-Basket at CHG 002 thru CHG 004. The D5204-1 Bracket attaches to the fwd crosstube hardpoint bolt in order to move the drag load away from the aircraft skin structure.

2.0 Permanent Removal of D4911-1/-3/-5 Brackets

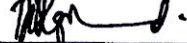
- 2.1 For D117-837-011 Heli-Utility-Baskets at CHG 003, remove and discard the D4794-043 Strut Assy by disconnecting 2x MS17984-C405 quick release pin.
- 2.2 For D117-837-011 Heli-Utility-Baskets at CHG 002, remove and discard the D4794-041 Strut Assy by disconnecting AN4-7 bolts and associated Hardware from both ends of D4794-041 Strut Assy.
- 2.3 For D117-837-011 Heli-Utility-Baskets at CHG 003. Discard the D4911-3 Bracket from airframe and reinstall 2x MS27039-1-08 Screws and 2x NAS1149F0332P washers.
- 2.4 For D117-837-011 Heli-Utility-Baskets at CHG 004. Discard the D4911-5 Bracket from airframe and reinstall 4x MS27039-1-08 screws and 4x NAS1149F0332P washers.
- 2.5 Repeat steps 2.3 to 2.4 for opposite side of the aircraft if the aircraft has been configured with basket provisions on both sides.
- 2.6 Remove the D4911-1 Bracket and associated hardware from the basket.
- 2.7 Inspect the underlying aircraft structure for damage. If cracking/buckling of the aircraft structure is observed, repair per BK117 Aircraft Maintenance Manual Chapter 21-1.

3.0 Installation of D5203-041 Strut Assy (RH strut installation shown, LH similar)

- 3.1 Remove the RH fwd crosstube aft p/n 105-50001.33 stepped washer (item 380) and replace with D5204-1 Bracket and NAS1149F0832P washer. Reinstall nut and torque per Aircraft Maintenance Manual. Reinstall split pin per Figure 1.
- 3.2 Install D5205-1 Bracket and associated hardware at basket rib shown in Figure 3.
- 3.3 Install D5203-041 Strut Assy onto D5204-1 Bracket and D5205-1 Bracket by connecting 2x MS17984-C405 Quick Release Pins as shown in Figures 2 and 3. Make adjustments to the AN665-34R threaded clevises and lock with NAS509-4C jam nuts. Secure the NAS509-4C jam nuts using lock wire per AC 14.13 or MS33540. After adjustment, use lockwire in the hole of the AN665-34R clevises to check for proper engagement of threads. It is acceptable to flip MS17984-C405 Quick Release Pin orientation as shown in Figures 2 and 3 to facilitate for suitable D5203-041 Strut Assy installation.
- 3.4 Repeat step 3.1 for opposite side of the aircraft if the aircraft is to be configured with basket provisions on both sides.

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DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
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MFG. APPR.	N/A	DSI 9716	SHEET 1 OF 4
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4.0 Parts List

For D117-837-011 Heli-Utility-Baskets @ CHG 005, the Parts List in ICA-D117-837 and IIN-D117-837 (as modified per DSI 9706 Rev. A) should be updated as follows:

Qty -011	Part Number	Description
X	D117-837-011	HELI-UTILITY-BASKET, LH/RH
1	D4784-011	BASKET ASSEMBLY, HEAVY DUTY, LH/RH
4	D5106-041	BRACKET ASSY
1	D5203-041	STRUT ASSY (REPLACES D4794-043)
2	D5204-1	BRACKET
1	D5205-1	BRACKET
2	AN3-11A	BOLT
4	AN4-12A	BOLT
2	NAS1149F0332P	WASHER
8	NAS1149F0416P	WASHER
2	NAS1149F0832P	WASHER
2	MS21042L3	NUT
4	MS21042L4	NUT

For D117-837-011 Heli-Utility-Baskets @ CHG 002 thru CHG 004, the DSI 9716-011 Strut Relocation Kit is available from Dart.

Qty -011	Part Number	Description
X	DSI 9716-011	STRUT RELOCATION KIT
1	D5203-041	STRUT ASSY (REPLACES D4794-043)
2	D5204-1	BRACKET
1	D5205-1	BRACKET
2	AN3-11A	BOLT
2	NAS1149F0332P	WASHER
2	NAS1149F0832P	WASHER
2	MS21042L3	NUT

5.0 Weight & Balance

This DSI has a negligible effect on Weight & Balance

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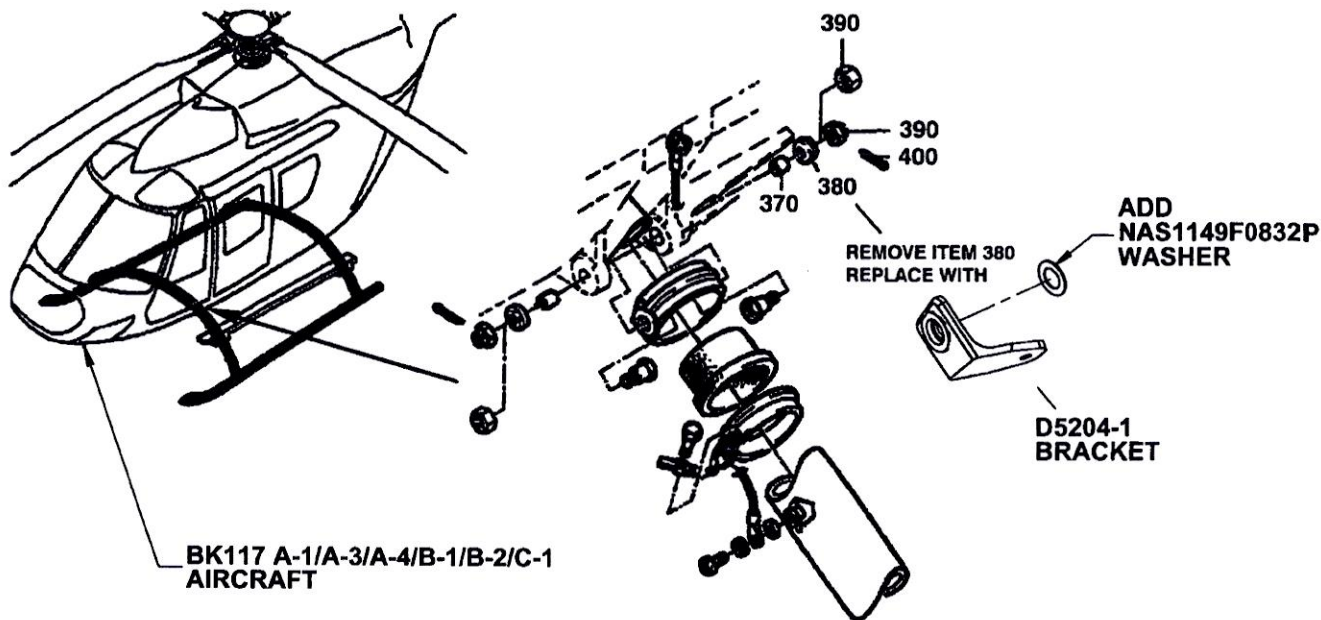


FIGURE 1. D5204-1 BRACKET INSTALLATION
(LH INSTALLATION SHOWN, RH OPPOSITE)

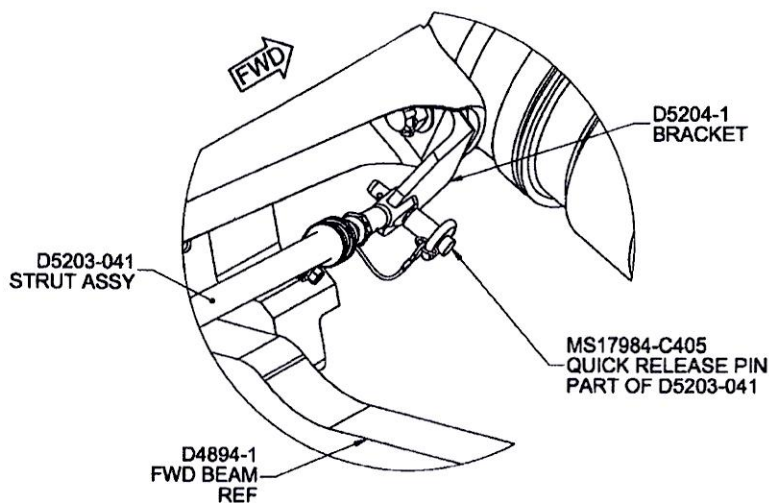


FIGURE 2. D5204-1 BRACKET INSTALLATION
(RH INSTALLATION SHOWN, LH OPPOSITE)
(BASKET & AIRCRAFT SKIN NOT SHOWN FOR CLARITY)

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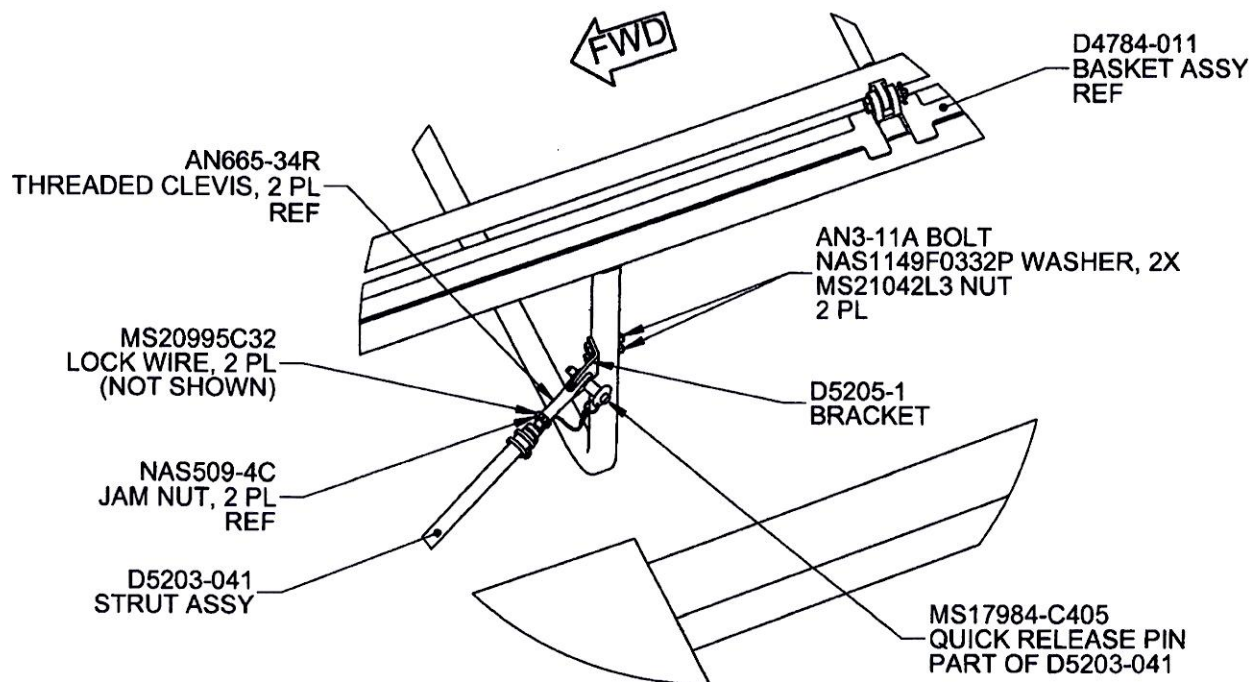


FIGURE 3. D5205-1 BRACKET INSTALLATION
(RH INSTALLATION SHOWN, LH OPPOSITE)

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Work Order ID 146586***146586***

Page 1

Monday, December 05, 2016 1:07:31 PM

Item ID: D117-837-011**Accept*****N900040100*****Setup Start*****NS1*****Revision ID:****Stop*****NS2*****Item Name:** BK117 Quick Release Heli-Utility-Basket™ Fits LH or RH**Start Date:** 6/15/2016 **Start Qty:** 1.00***1*****Cust Item ID:****Required Date:** 6/27/2016 **Req'd Qty:** 1.00***1*****Customer:****Reference:****Approvals:****Process Plan:** _____**Date:** _____**Tooling:** _____**Date:** _____**Run Start*****NR1*****QC:** _____**Date:** _____**SPC (Y/N):** _____**Date:** _____**Stop*****NR2*****Sequence ID/
Work Center ID****Operation
Description****Set Up/
Run Hours****Tool ID****Tool #****Plan
Code****Accept
Qty****Reject
Qty****Reject
Number****Insp.
Stamp****Draw Nbr****Revision Nbr**

DSI9706-011

A

DSI9716

A

IIN-D117-837

B

100

Document Control

0.00

100

DC

Memo

0.00

Doc.Control -USB or Paperwork

Photocopy bluefile & type labels per PPP D117-837-011 CHG006

DAS
21
9-89

DEC 05 2016

110

Pick Kit

0.00

110

Packaging

Memo

0.00

Packaging

REFERENCE ONLY**5.0 PARTS LIST**

Qty -011	Qty -013	Qty -111	Part Number	Description
X			D117-837-011	HELI-UTILITY-BASKET, LH/RH
	X		D117-837-013	PROP ARM KIT
1		X	D117-837-111	BASKET PROVISION MOUNTING KIT
	1*		D2332-041	PROP ASSEMBLY (OPTIONAL)
	4*		D3953-9	WASHER
1			D4784-011	BASKET ASSEMBLY, HEAVY DUTY, LH/RH
1			D4794-043	STRUT ASSY
		2	D4893-1	HARDPOINT ADAPTER, LH
		2	D4893-2	HARDPOINT ADAPTER, RH
		1	D4894-1	FWD BEAM
		1	D4894-3	AFT BEAM
		1	D4895-045	FWD OUTBOARD BEAM ASSY
		1	D4895-047	AFT OUTBOARD BEAM ASSY
1			D4911-1	BRACKET
2			D4911-3	BRACKET
4			D5106-041	BRACKET ASSY
2			AN3-11A	BOLT
4			AN4-12A	BOLT
		4	AN4-17A	BOLT
		12	AN5-23A	BOLT
		12	MS20002C6	WASHER
2			MS21042-3	NUT
4		4	MS21042L4	NUT
		12	MS21042L5	NUT
		12	MS21042L6	NUT
4			MS21069L3	ANCHOR NUT
		12	MS21250-06022	BOLT
4			MS27039-1-08	SCREW
8			NAS1097AD3-4	RIVET
	3*		NAS1149C0463R	WASHER (or AN960C416)
8		8	NAS1149D0416J	WASHER (or AN960JD416L)
		24	NAS1149D0516J	WASHER (or AN960JD516L)
		12	NAS1149D0616J	WASHER (or AN960JD616L)
6			NAS1149F0332P	WASHER (or AN960-10L)

* D2332-041 PROP ASSEMBLY & HARDWARE (OPTIONAL) TO REPLACE D3969-3 GAS SPRING

4.0 Parts List

REFERENCE ONLY

For D117-837-011 Heli-Utility-Baskets @ CHG 005, the Parts List in ICA-D117-837 and IIN-D117-837 (as modified per DSI 9706 Rev. A) should be updated as follows:

Qty -011	Part Number	Description
X	D117-837-011	HELI-UTILITY-BASKET, LH/RH
1	D4784-011	BASKET ASSEMBLY, HEAVY DUTY, LH/RH
4	D5106-041	BRACKET ASSY
1	D5203-041	STRUT ASSY (REPLACES D4794-043)
2	D5204-1	BRACKET
1	D5205-1	BRACKET
2	AN3-11A	BOLT
4	AN4-12A	BOLT
2	NAS1149F0332P	WASHER
8	NAS1149F0416P	WASHER
2	NAS1149F0832P	WASHER
2	MS21042L3	NUT
4	MS21042L4	NUT

For D117-837-011 Heli-Utility-Baskets @ CHG 002 thru CHG 004, the DSI 9716-011 Strut Relocation Kit is available from Dart.

Qty -011	Part Number	Description
X	DSI 9716-011	STRUT RELOCATION KIT
1	D5203-041	STRUT ASSY (REPLACES D4794-043)
2	D5204-1	BRACKET
1	D5205-1	BRACKET
2	AN3-11A	BOLT
2	NAS1149F0332P	WASHER
2	NAS1149F0832P	WASHER
2	MS21042L3	NUT

5.0 Weight & Balance

This DSI has a negligible effect on Weight & Balance

CANADA
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DAO # 01-O-01

APPROVED

BY: 
D. SHEPHERD (DE # 02)

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REFERENCE ONLY

4.0 Parts List

For D117-837-011 Heli-Utility-Baskets @ CHG 004, the Parts List in ICA-D117-837 and IIN-D117-837 should be updated as follows:

IS

Qty -011	Part Number	Description
X	D117-837-011	HELI-UTILITY-BASKET, LH/RH
2	D4911-5	BRACKET (REPLACES D4911-3)
8	MS21069L3	ANCHOR NUT
8	MS27039-1-08	SCREW
16	NAS1097AD3-4	RIVET
10	NAS1149F0332P	WASHER

WAS

Qty -011	Part Number	Description
X	D117-837-011	HELI-UTILITY-BASKET, LH/RH
2	D4911-3	BRACKET
4	MS21069L3	ANCHOR NUT
4	MS27039-1-08	SCREW
8	NAS1097AD3-4	RIVET
6	NAS1149F0332P	WASHER

For D117-837-011 Heli-Utility-Baskets @ CHG 002 or CHG 003, the DSI 9706-011 Basket Modification Kit is available from Dart.

Qty -011	Part Number	Description
X	DSI 9706-011	BRACKET MODIFICATION KIT
2	D4911-5	BRACKET
8	MS21069L3	ANCHOR NUT
8	MS27039-1-08	SCREW
16	NAS1097AD3-4	RIVET
8	NAS1149F0332P	WASHER

5.0 Weight & Balance

This DSI has a negligible effect on Weight & Balance

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-O-01

APPROVED

BY: 
D. SHEPHERD (DE # 02)

DATE: 14.09.03
CERT. NO.: SH13-22
ISSUE NO.: 1

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	HS	DRAWING NO.	REV. A
MFG. APPR.	N/A	DSI 9706	SHEET 2 OF 3
APPROVED		TITLE	SCALE
DE APPR.		BRACKET MODIFICATION	NTS
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